

What is claimed is:

- 1 1. A heat sink assembly comprising:
 - 2 a heat conduit; and
 - 3 a block formed of a thermally conductive material having a first thermal conductivity,
 - 4 the heat conduit extending through a substantial portion of the block,
 - 5 the heat conduit having a second thermal conductivity greater than the first
 - 6 thermal conductivity.
- 1 2. The heat sink assembly of claim 1, wherein the first thermal conductivity is
2 greater than or equal to about 10.
- 1 3. The heat sink assembly of claim 2, wherein the first thermal conductivity is less
2 than or equal to about 100.
- 1 4. The heat sink assembly of claim 1, wherein the heat conduit is adapted to transfer
2 heat from a heat source along its length.
- 1 5. The heat sink assembly of claim 4, wherein the block is adapted to transfer heat
2 away from the heat conduit.
- 1 6. The heat sink assembly of claim 1, wherein the block has a first segment on one
2 side of a portion of the heat conduit, and the block has a second segment on another side
3 of the portion of the heat conduit,
4 the first segment having a first heat conduction distance to dissipate heat from the
5 heat conduit, and the second segment having a second heat conduction distance to
6 dissipate heat from the heat conduit.
- 1 7. The heat sink assembly of claim 6, wherein the first and second heat conduction
2 distances are substantially the same.

1 8. The heat sink assembly of claim 7, further comprising a second heat conduit
2 extending through another substantial portion of the block.

1 9. The heat sink assembly of claim 8, wherein the block has a third segment on one
2 side of a portion of the second heat conduit, and the block has a fourth segment on
3 another side of the portion of the second heat conduit,
4 the third segment having a third heat conduction distance to dissipate heat from
5 the second heat conduit, and the fourth segment having a fourth heat conduction distance
6 to dissipate heat from the second heat conduit.

1 10. The heat sink assembly of claim 9, wherein each of the first, second, third, and
2 fourth segments have airflow channels extending therethrough.

1 11. The heat sink assembly of claim 5, wherein the block has airflow channels to
2 provide surfaces on the block exposed to airflow.

1 12. The heat sink assembly of claim 1, wherein the thermally conductive material
2 comprises a non-metallic material.

1 13. The heat sink assembly of claim 1, wherein the thermally conductive material
2 comprises a thermally conductive polymer.

1 14. The heat sink assembly of claim 13, wherein the heat conduit comprises a heat
2 pipe.

1 15. The heat sink assembly of claim 13, wherein the heat conduit comprises a tubular
2 structure having a bore through which fluid is adapted to flow to transfer heat.

1 16. The heat sink assembly of claim 1, further comprising plural other heat conduits
2 extending through respective substantial portions of the block.

1 17. The heat sink assembly of claim 1, wherein the heat conduit has a first portion and
2 a second portion angled with respect to the first portion, the first portion adapted to
3 contact a surface of a heat source.

1 18. The heat sink assembly of claim 17, wherein the block has a vertical axis and a
2 horizontal plane formed by two axes, the first portion of the heat conduit extending
3 generally along the horizontal plane, and the second portion of the heat conduit extending
4 generally along the vertical axis.

1 19. The heat sink assembly of claim 18, wherein the second portion has a shape
2 selected from the group consisting of: generally straight, generally S-shaped, and shaped
3 as a loop.

1 20. The heat sink assembly of claim 18, further comprising a second heat conduit
2 extending through another portion of the block, the second heat conduit having a first
3 portion extending generally along the horizontal plane and a second portion extending
4 generally along the vertical axis.

1 21. The heat sink assembly of claim 18, wherein the block has a first side edge, the
2 second portion of the heat conduit a first distance from the first side edge, the first
3 distance being a heat conduction distance of a first segment of the block, the first segment
4 of the block to dissipate heat from the heat conduit.

1 22. The heat sink assembly of 21, further comprising a second heat conduit extending
2 through another substantial portion of the block, the second heat conduit having a first
3 portion extending generally along the horizontal axis and a second portion extending
4 generally along the vertical axis, the block having a second side edge, the second portion
5 of the second heat conduit a second distance from the second edge, the second distance
6 being a second heat conduction distance of a second segment of the block, the second
7 segment to dissipate heat from the second heat conduit.

- 1 23. The heat sink assembly of claim 22, wherein the block has airflow channels
2 through at least the first and second segments.
- 1 24. A method of dissipating heat from a component, comprising:
2 providing a block formed of a thermally conductive material having a first
3 thermal conductivity; and
4 extending an elongated heat conduit through a substantial portion of the block, the
5 elongated heat conduit having a second thermal conductivity greater than the first thermal
6 conductivity.
- 1 25. The method of claim 24, wherein extending the elongated heat conduit comprises
2 extending a heat pipe.
- 1 26. The method of claim 24, wherein providing the block formed of the thermally
2 conductive material comprises providing the block formed of a thermally conductive
3 polymer.
- 1 27. The method of claim 24, further comprising extending another elongated heat
2 conduit through another substantial portion of the block.
- 1 28. The method of claim 24, further comprising:
2 providing a first segment of the block on one side of a portion of the elongated
3 heat conduit to dissipate heat from the elongated heat conduit; and
4 providing a second segment of the block on another side of the portion of the
5 elongated heat conduit to dissipate heat from the elongated heat conduit.
- 1 29. The method of claim 28, further comprising providing airflow channels through
2 the first and second segments.
- 1 30. The method of claim 29, wherein the block has a horizontal axis and a vertical
2 axis, the portion of the elongated heat conduit extending generally along the vertical axis.

1 31. A system comprising:
2 a component; and
3 a heat sink thermally contacted to the component,
4 the heat sink having a block formed of a thermally conductive material, the heat
5 sink having a first segment and a second segment,
6 the heat sink further having a heat conduit extending through the block between
7 the first and second segments, the first segment to transfer heat away from the heat
8 conduit in a first direction, and the second segment to transfer heat away from the heat
9 conduit in a second direction.

1 32. The system of claim 31, wherein the heat conduit comprises a heat pipe.

1 33. The system of claim 32, wherein the thermally conductive material comprises
2 thermally conductive polymer.

1 34. The system of claim 31, wherein the thermally conductive material has a first
2 thermal conductivity, and the heat conduit has a second thermal conductivity greater than
3 the first thermal conductivity.

1 35. The system of claim 34, wherein the first thermal conductivity is in a range
2 between 10 and 100.

1 36. The system of claim 31, wherein the heat sink further comprises airflow channels
2 extending through the first and second segments.

1 37. The system of claim 31, wherein the block further has a third segment and a
2 fourth segment, the heat sink further having a second heat conduit extending between the
3 third and fourth segments.

1 38. The system of claim 37, wherein the thermally conductive material comprises
2 thermally conductive polymer.

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1 39. The system of claim , wherein the heat conduits comprise heat pipes.

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